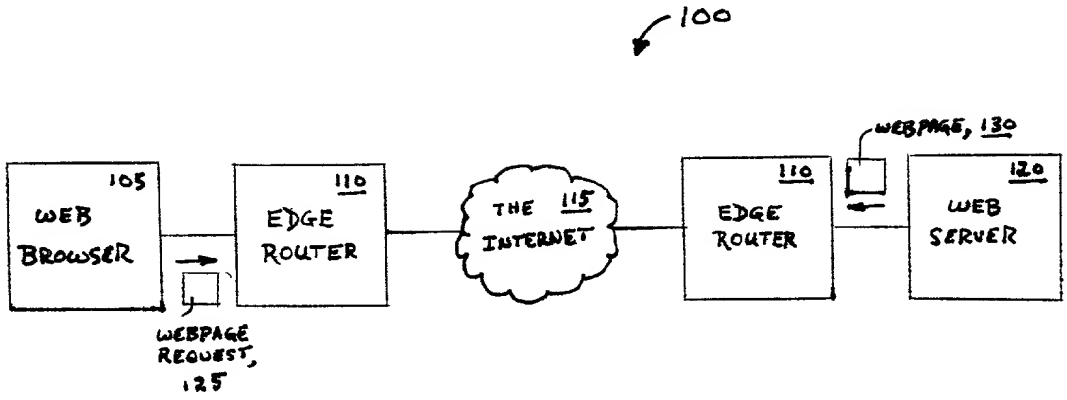
100
105
WEB BROWSER
110
EDGE ROUTER
THE 115 INTERNET
110
EDGE ROUTER
WEBPAGE, 130
120
WEB SERVER
WEBPAGE REQUEST, 125

FIG. 1

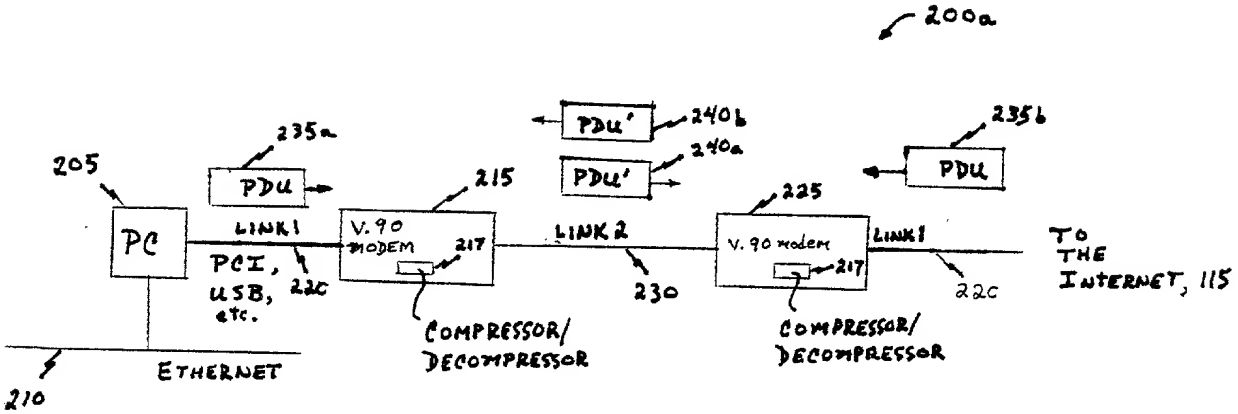
200a
205
235a
PDU
240b
PDU'
240a
PDU'
215
235b
PDU
225
PC
LINK1
PCI, USB, etc.
220
V.90 MODEM
217
LINK2
230
V.90 modem
217
LINK1
220
TO THE INTERNET, 115
COMPRESSOR/ DECOMPRESSOR
COMPRESSOR/ DECOMPRESSOR
ETHERNET
210

FIG. 2A

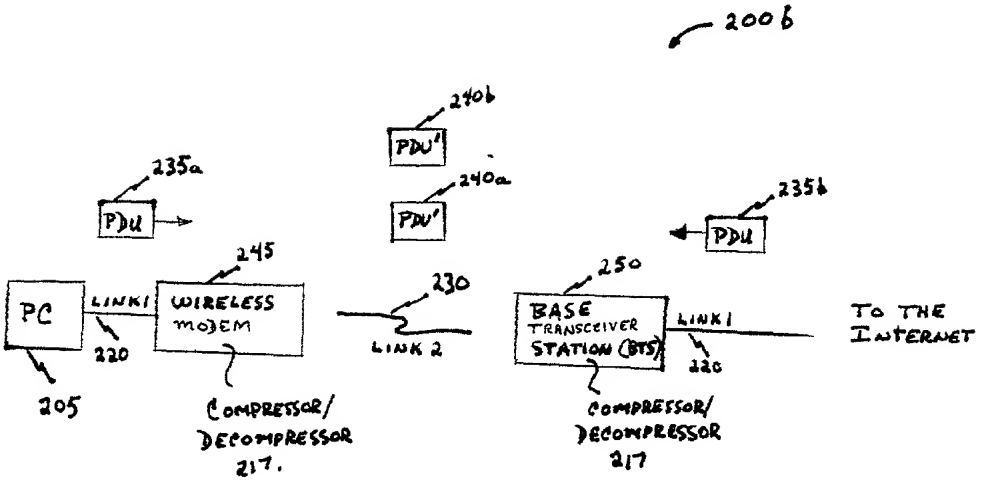
200b
240b
PDU'
240a
PDU'
235a
PDU
235b
PDU
245
230
250
PC
LINK1
WIRELESS MODEM
LINK 2
BASE TRANSCEIVER STATION (BTS)
LINK1
TO THE INTERNET
220
220
205
COMPRESSOR/ DECOMPRESSOR 217.
COMPRESSOR/ DECOMPRESSOR 217

FIG. 2B

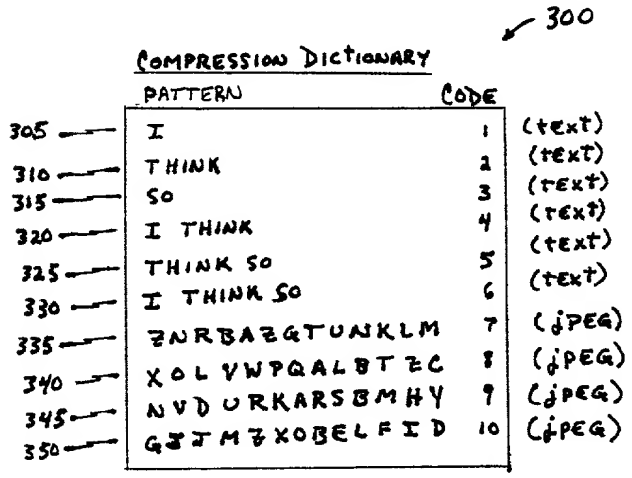
300
COMPRESSION DICTIONARY
PATTERN
CODE
305
I
1
(text)
310
THINK
2
(text)
315
SO
3
(text)
320
I THINK
4
(text)
325
THINK SO
5
(text)
330
I THINK SO
6
(text)
335
ZNRBAZGTUNKLM
7
(jPEG)
340
XOLVWPQALBTZC
8
(jPEG)
345
NVDURKARSBMHY
9
(jPEG)
350
GBTMZXOBELFID
10
(jPEG)

FIG. 3

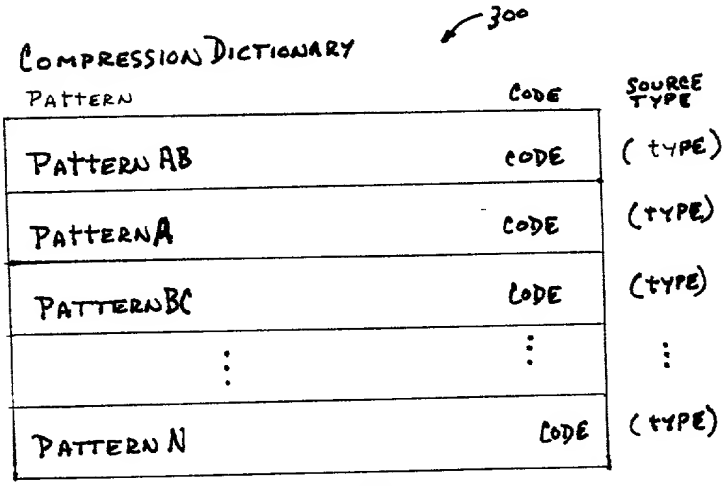
300
COMPRESSION DICTIONARY
PATTERN
CODE
SOURCE TYPE
PATTERN AB
CODE
(TYPE)
PATTERN A
CODE
(TYPE)
PATTERN BC
CODE
(TYPE)
PATTERN N
CODE
(TYPE)

FIG. 4A

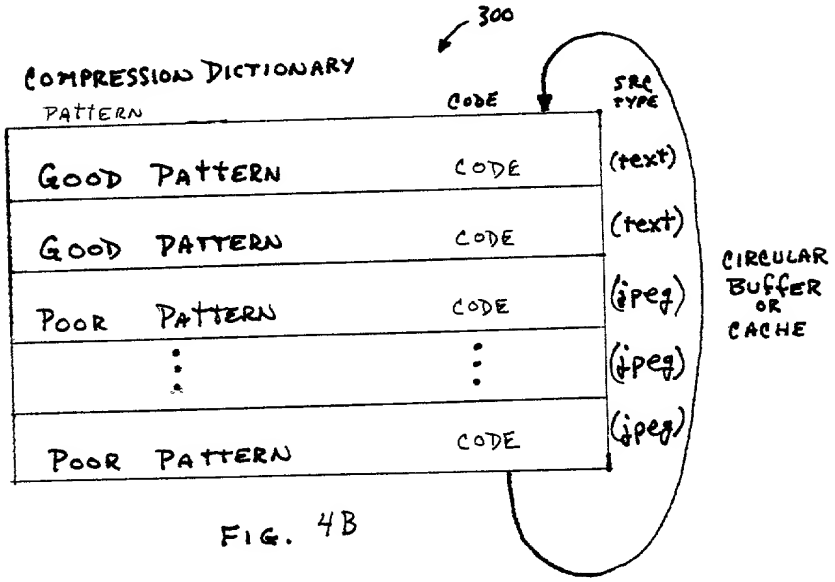
300
COMPRESSION DICTIONARY
PATTERN
CODE
SRC TYPE
GOOD PATTERN
CODE
(text)
GOOD PATTERN
CODE
(text)
POOR PATTERN
CODE
(jpeg)
(jpeg)
POOR PATTERN
CODE
(jpeg)
CIRCULAR BUFFER OR CACHE

FIG. 4B

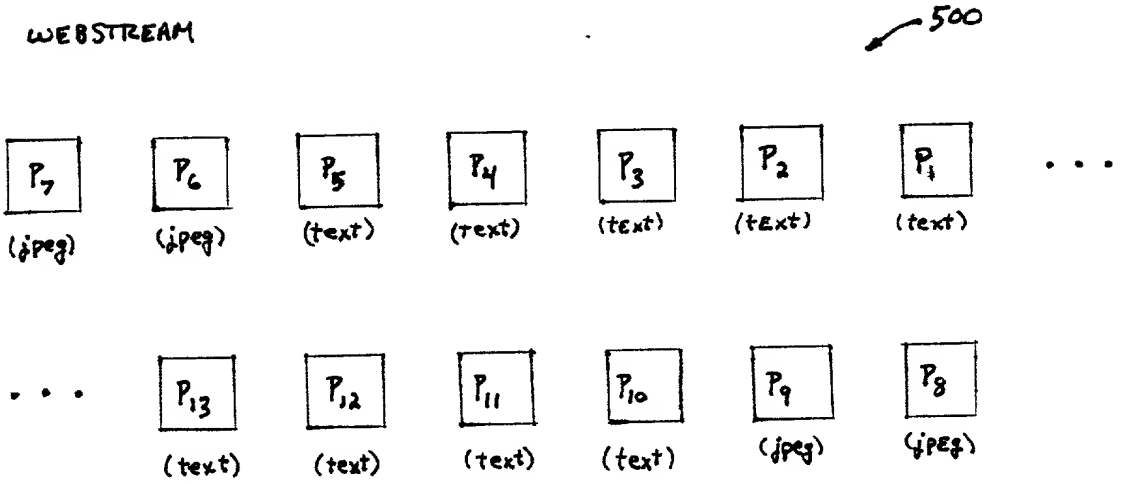
WEBSTREAM
500
P7 (jpeg)
P6 (jpeg)
P5 (text)
P4 (text)
P3 (text)
P2 (text)
P1 (text)
P13 (text)
P12 (text)
P11 (text)
P10 (text)
P9 (jpeg)
P8 (jpeg)

FIG. 5A

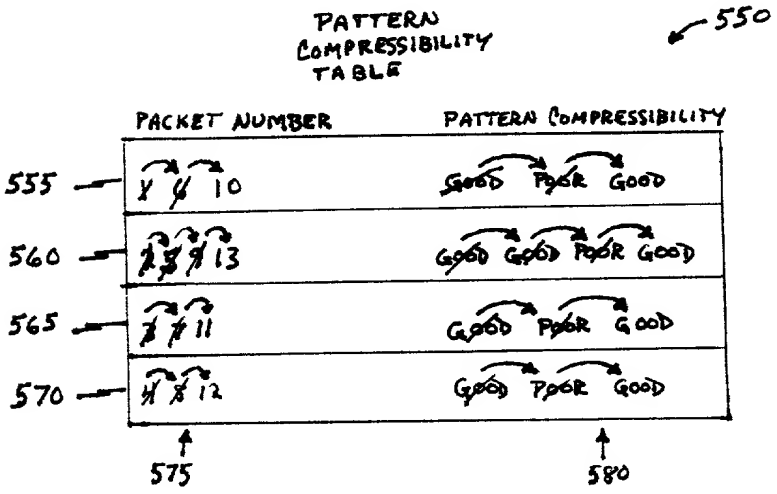
PATTERN COMPRESSIBILITY TABLE
550
PACKET NUMBER
PATTERN COMPRESSIBILITY
555
10
GOOD POOR GOOD
560
13
GOOD GOOD POOR GOOD
565
11
GOOD POOR GOOD
570
12
GOOD POOR GOOD
575
580

FIG. 5B

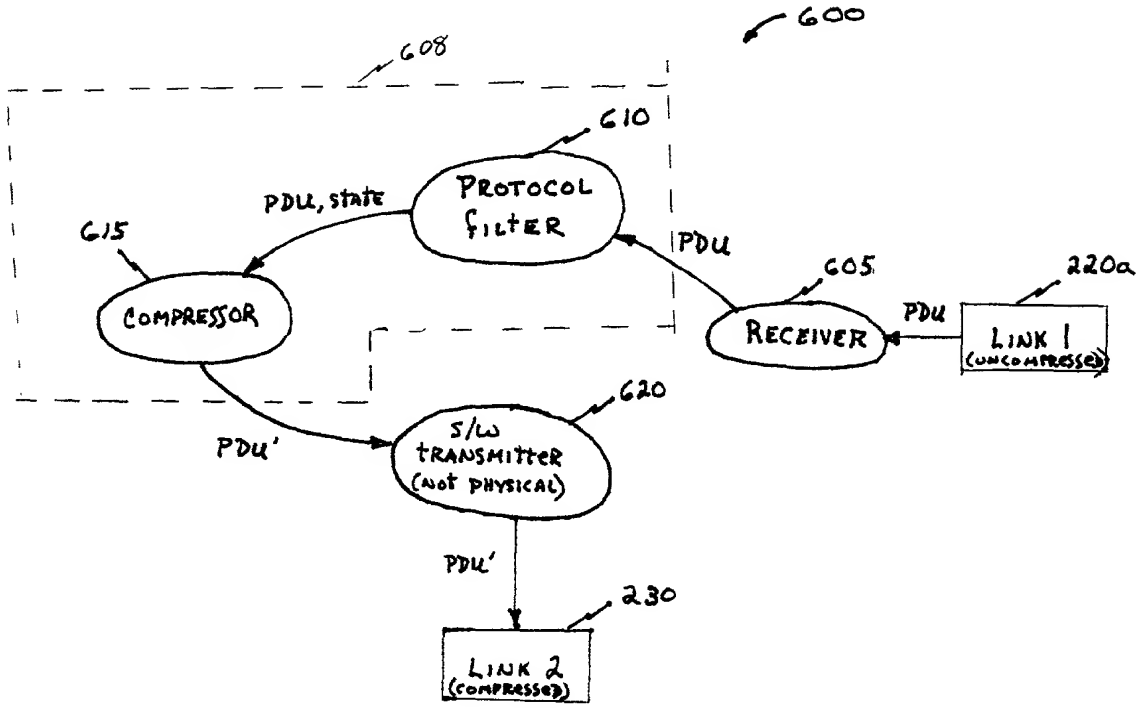
600
608
610
PROTOCOL FILTER
PDU, state
615
COMPRESSOR
PDU
605
RECEIVER
220a
PDU
LINK 1 (UNCOMPRESSED)
620
S/W TRANSMITTER (NOT PHYSICAL)
PDU'
PDU'
230
LINK 2 (COMPRESSED)

FIG. 6A

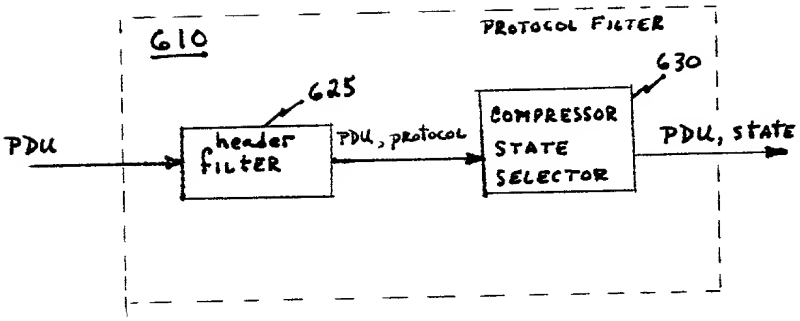
610
PROTOCOL FILTER
625
630
PDU
header filter
PDU, protocol
COMPRESSOR STATE SELECTOR
PDU, STATE

FIG. 6B

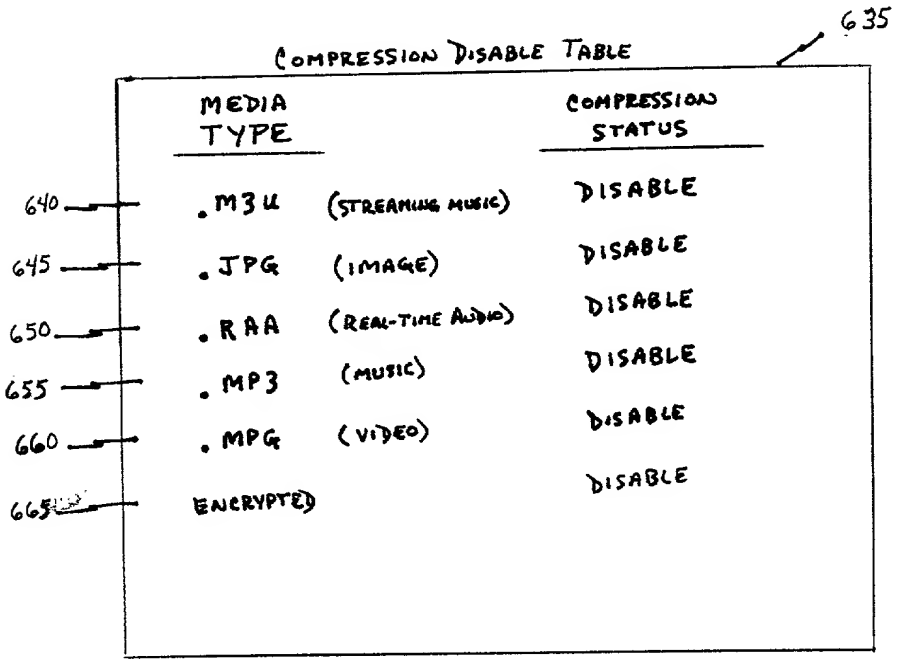
635
COMPRESSION DISABLE TABLE
MEDIA TYPE
COMPRESSION STATUS
640
.M3U (STREAMING MUSIC)
DISABLE
645
.JPG (IMAGE)
DISABLE
650
.RAA (REAL-TIME AUDIO)
DISABLE
655
.MP3 (MUSIC)
DISABLE
660
.MPG (VIDEO)
DISABLE
665
ENCRYPTED
DISABLE

FIG. 6C

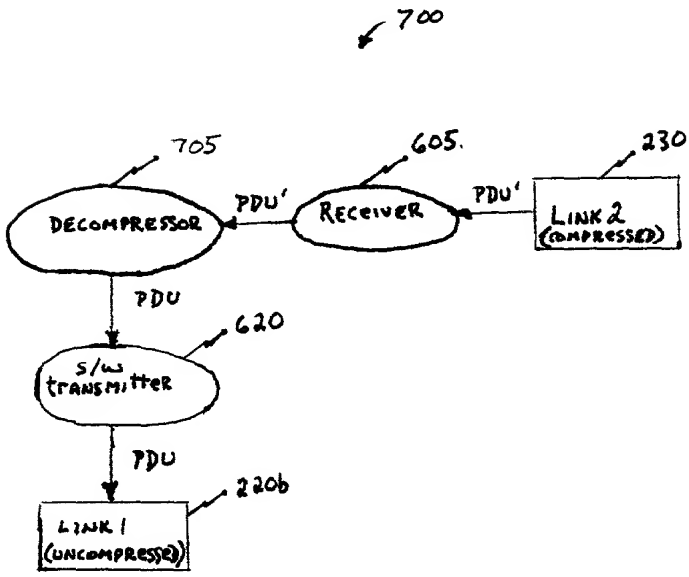
700
705
605
230
DECOMPRESSOR
PDU'
RECEIVER
PDU'
LINK 2
(COMPRESSED)
PDU
620
S/W
TRANSMITTER
PDU
220b
LINK 1
(UNCOMPRESSED)

FIG. 7

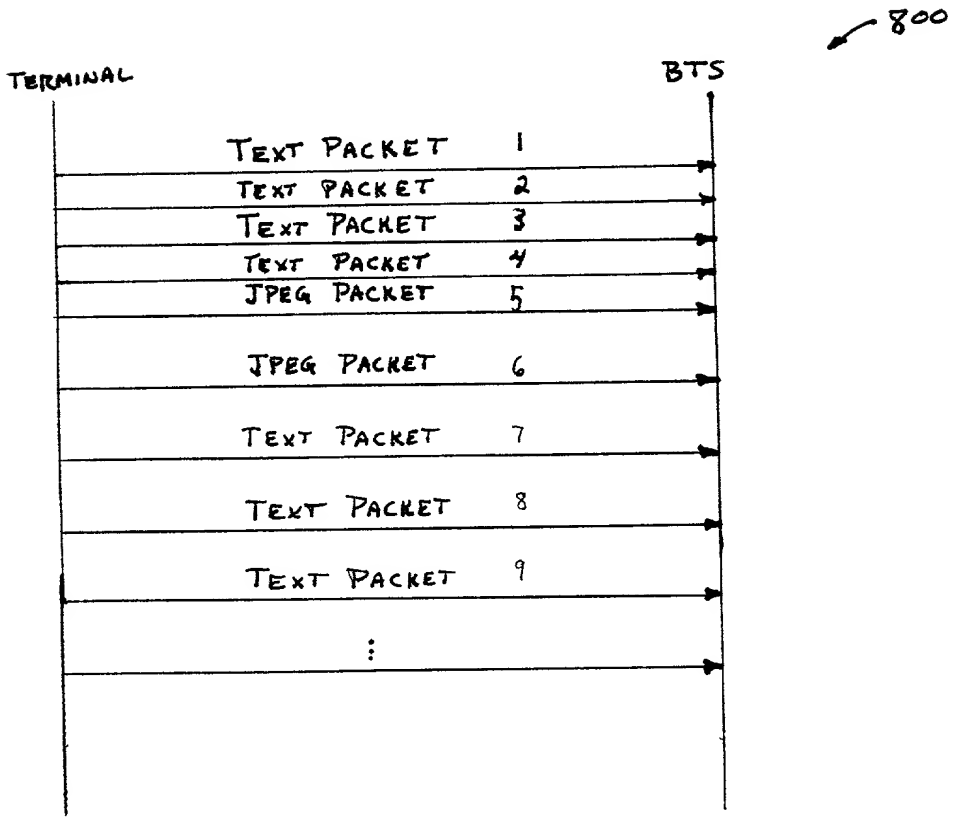
800
TERMINAL
BTS
TEXT PACKET 1
TEXT PACKET 2
TEXT PACKET 3
TEXT PACKET 4
JPEG PACKET 5
JPEG PACKET 6
TEXT PACKET 7
TEXT PACKET 8
TEXT PACKET 9

FIG. 8A

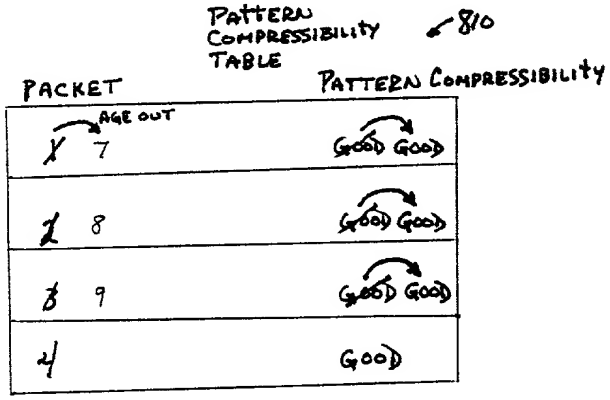
PATTERN COMPRESSIBILITY TABLE
810
PACKET
PATTERN COMPRESSIBILITY
AGE OUT
7
8
9
GOOD GOOD
GOOD GOOD
GOOD GOOD
GOOD

FIG. 8C

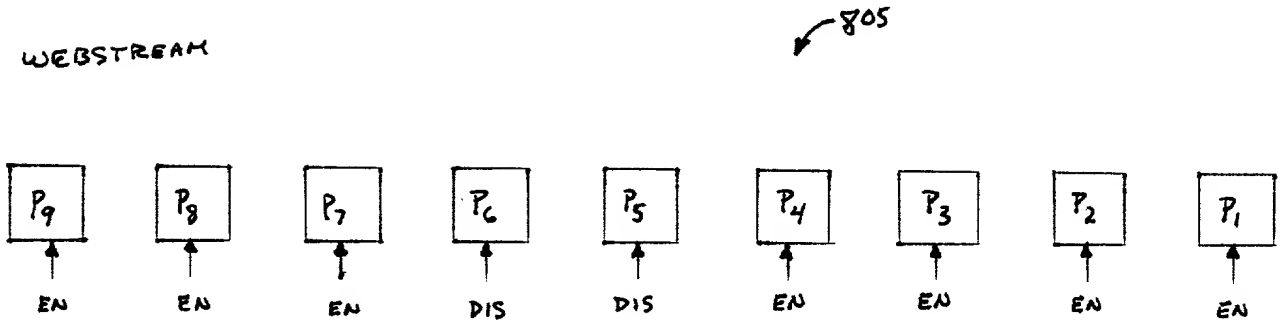

FIG. 8B

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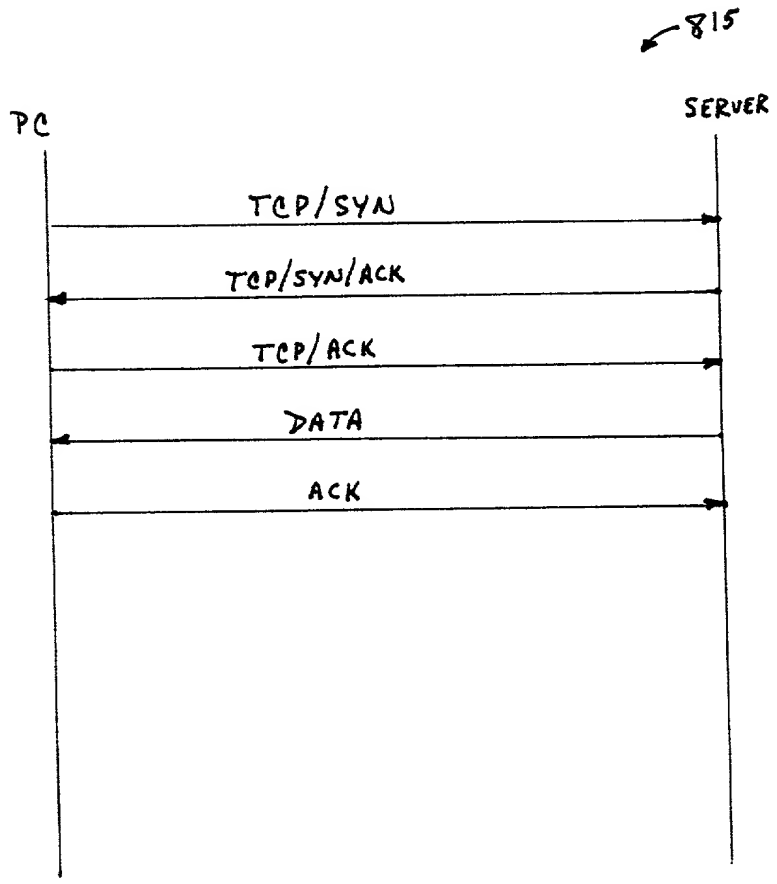

Fig. 8D

Replacement Sheet

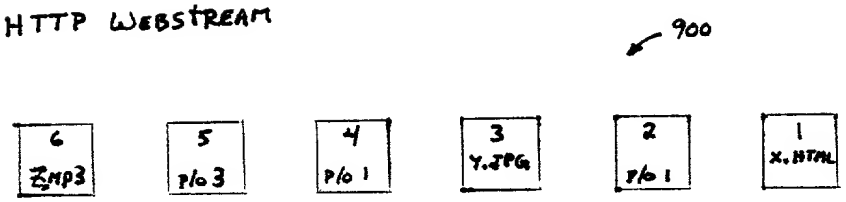
HTTP WEBSTREAM
900
6
ZMP3
5
P/O 3
4
P/O 1
3
Y.JPG
2
P/O 1
1
X.HTML

FIG. 9A

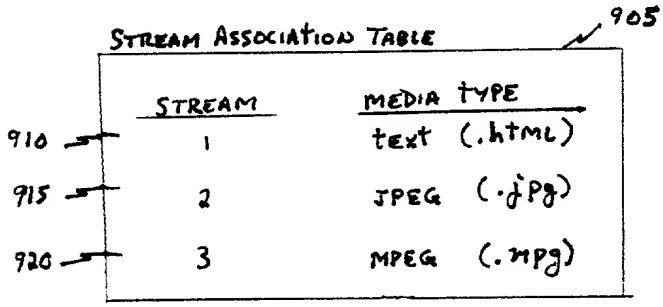
STREAM ASSOCIATION TABLE
905
STREAM
MEDIA TYPE
910
1
text (.html)
915
2
JPEG (.jpg)
920
3
MPEG (.mpg)

FIG. 9B

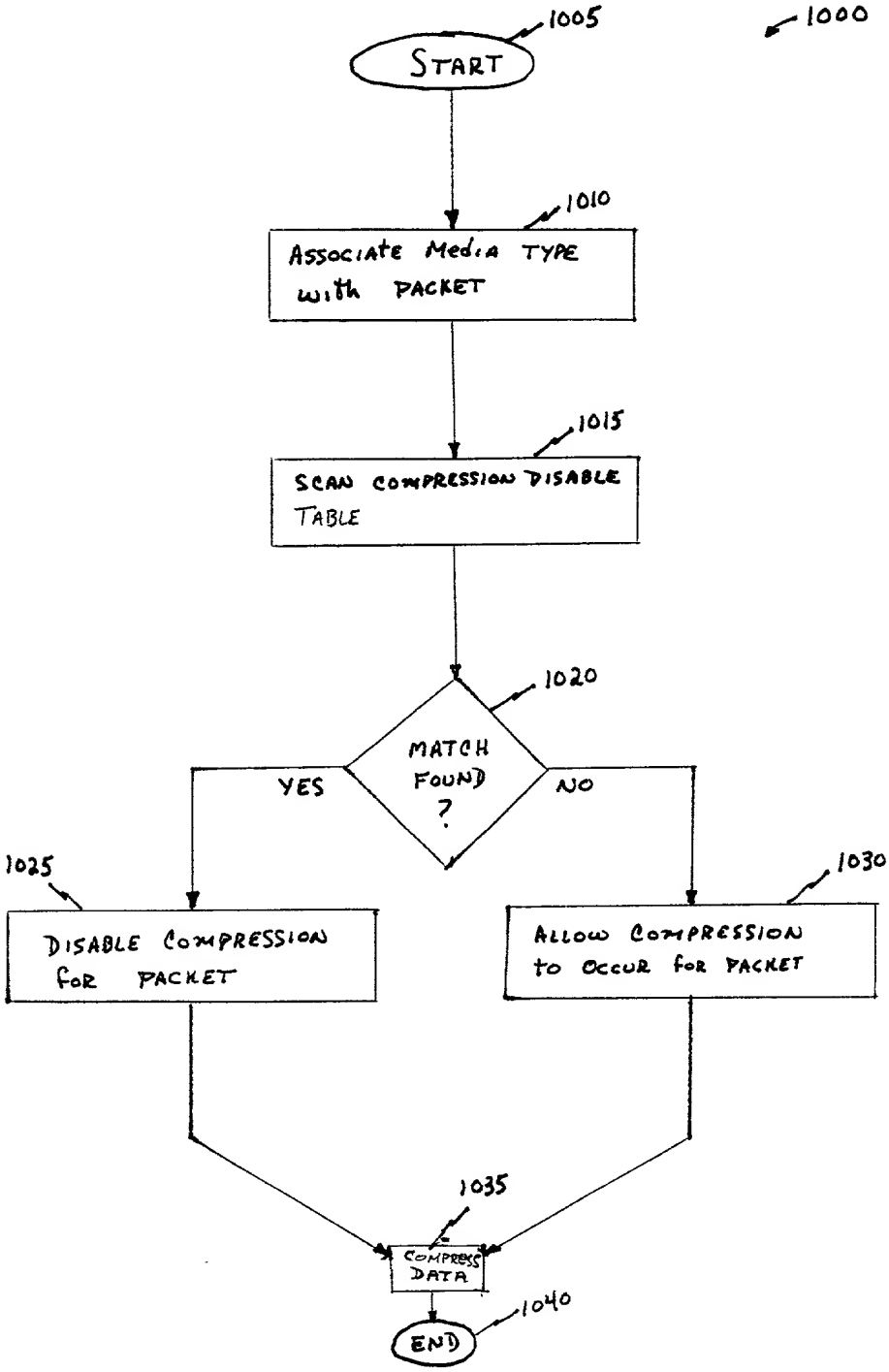

FIG. 10

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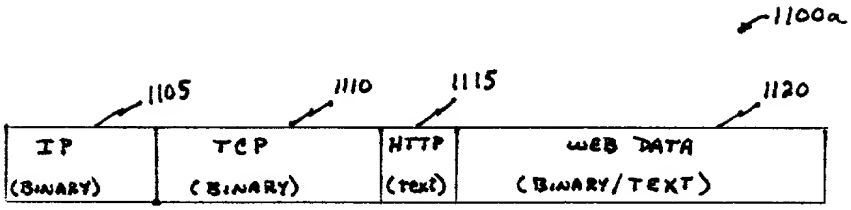
1100a
1105
1110
1115
1120
IP
(BINARY)
TCP
(BINARY)
HTTP
(text)
WEB DATA
(BINARY/TEXT)

FIG. 11A

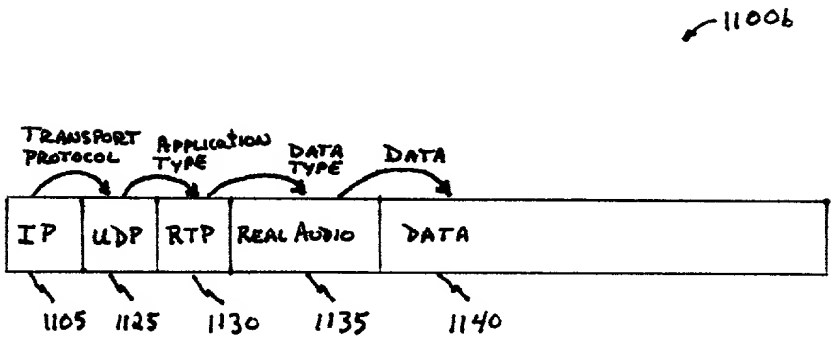

FIG. 11B

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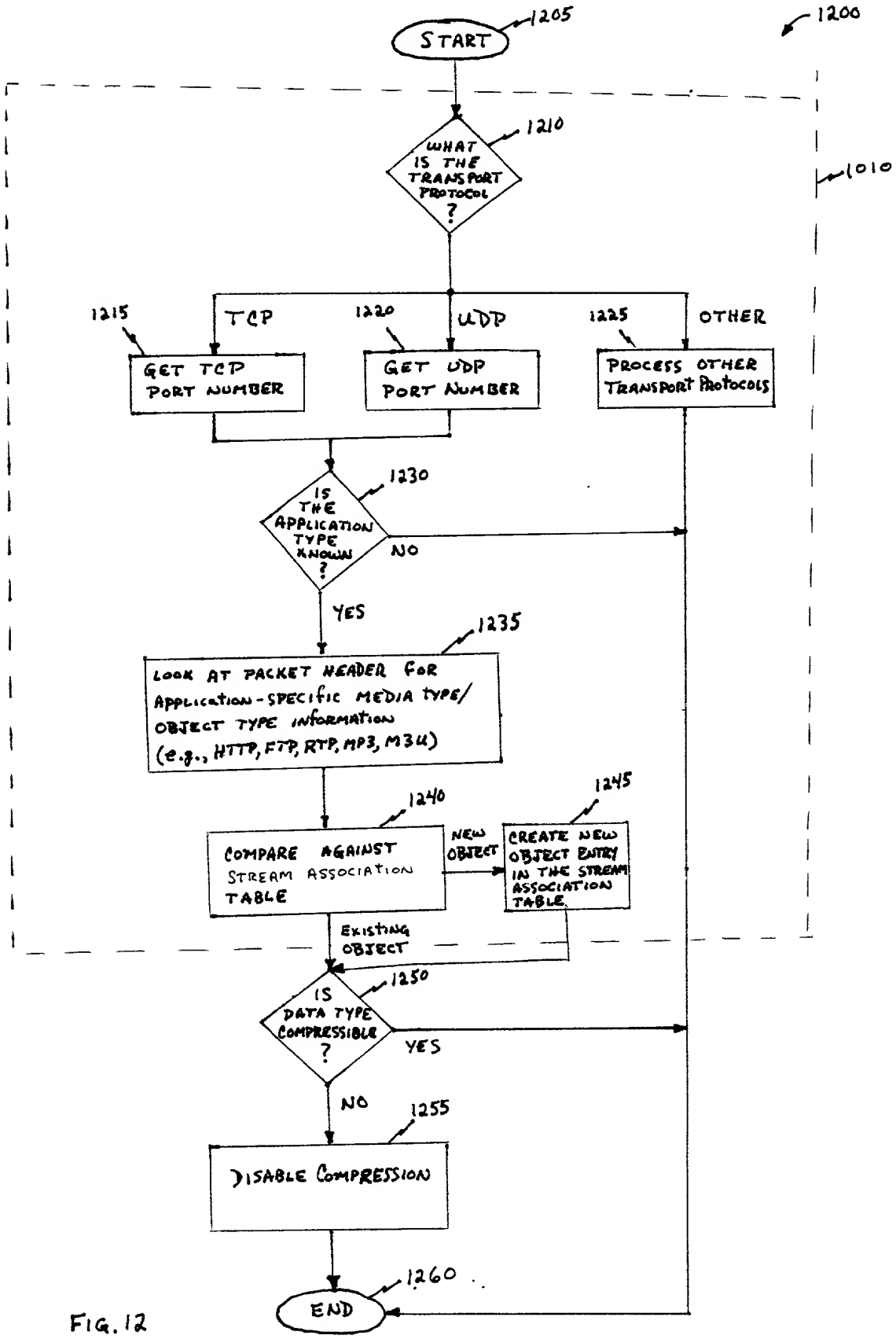
1200
START
1205
1010
WHAT IS THE TRANSPORT PROTOCOL ?
1210
TCP
UDP
OTHER
1215
1220
1225
GET TCP PORT NUMBER
GET UDP PORT NUMBER
PROCESS OTHER TRANSPORT PROTOCOLS
IS THE APPLICATION TYPE KNOWN ?
1230
NO
YES
LOOK AT PACKET HEADER FOR APPLICATION-SPECIFIC MEDIA TYPE/ OBJECT TYPE INFORMATION (e.g., HTTP, FTP, RTP, MP3, M3U)
1235
COMPARE AGAINST STREAM ASSOCIATION TABLE
1240
NEW OBJECT
CREATE NEW OBJECT ENTRY IN THE STREAM ASSOCIATION TABLE
1245
EXISTING OBJECT
IS DATA TYPE COMPRESSIBLE ?
1250
YES
NO
DISABLE COMPRESSION
1255
END
1260

FIG. 12